

AMENDMENTS TO THE CLAIMS

In the Claims:

The following listing of claims replaces all prior versions and listings of claims in the application.

Listing of Claims:

1. (Currently amended) Method for authenticity testing a security element on the basis of liquid-crystalline materials, the security element having at least one first marking with right-handed circularly polarizing liquid-crystalline material and at least one second marking with left-handed circularly polarizing liquid-crystalline material, or having only one marking which contains both right-handed and left-handed circularly polarizing liquid-crystalline material, the method comprising:

- filtering the light impinging on the security element or the light reflected by the security element by means of a first circular polarizer for a first polarization direction, recording a first image of the security element and determining respective intensity values,

- filtering the light impinging on the security element or the light reflected by the security element by means of a second circular polarizer for a second polarization direction, recording a second image of the security element and determining respective intensity values,

- determining a differential image from the first and second image by subtracting an intensity value of a partial area of the first image from a respective intensity value of a corresponding partial area of the second image, and

- deriving a statement about the authenticity of the security element on the basis of the differential image.

2. (Original) Method according to claim 1, characterized in that as first and second circular polarizer a right-handed polarizer and a left-handed polarizer are used respectively.

3. (Previously presented) Method according to claim 1, characterized in that the security element is illuminated during the image recordings.

4. (Previously presented) Method according to claim 1, characterized in that during the recording of the first or the second image the first or the second circular polarizer is located between the security element and an apparatus for recording the image.

5. (Previously presented) Method according to claim 1, characterized in that during the recording of the first or the second image the first or the second circular polarizer is located between an illumination apparatus and the security element.

6. (Previously presented) Method according to claim 1, characterized in that between the recording of the first image and the recording of the second image an automated change of the circular polarizer is effected.

7. (Previously presented) Method according to claim 1, characterized in that for recording each the first and the second image a separate image recording apparatus is used.

8. (Original) Method according to claim 7, characterized in that the first and the second image are recorded simultaneously.

9. (Previously presented) Method according to claim 7, characterized in that the recording of the first and the second image is effected via a common beam splitter, which is disposed between the two image recording apparatuses and the security element.

10. (Previously presented) Method according to claim 1, characterized in that as an image recording apparatus a video camera or a digital camera is used.

11. (Previously presented) Method according to claim 1, characterized in that the derivation of a statement about the authenticity of the security element is effected by an electronic evaluation of the differential image.

12. (Original) Method according to claim 11, characterized in that for the electronic evaluation of the differential image methods of digital image processing are used.

13. (Previously presented) Method according to claim 1, characterized in that the differential image is pictorially represented in a display device.

14. (Original) Method according to claim 13, characterized in that the representation of the differential image is effected on a monitor or a display.

15. (Original) Method according to claim 3, characterized in that the illumination of the security element is effected by a bundle of light guide fibres.

16. (Previously presented) Method according to claim 1, characterized in that before the determination of the difference in at least one of the two images or data of the images a correction is carried out.

17. (Previously presented) Method according to claim 1, characterized in that the result of the authenticity testing is transmitted encodedly or is passed on provided with an electronic signature.

18. (Previously presented) Method according to claim 1, characterized in that the authenticity testing is carried out on a security element, which is a deposit token of a container.

19. (Currently amended) Apparatus for authenticity testing a security element on the basis of liquid-crystalline materials, the security element having at least one marking with right-handed circularly polarizing liquid-crystalline material and at least one second marking with left-handed circularly polarizing liquid-crystalline material, or having only one marking which contains both right-handed and left-handed circularly polarizing liquid-crystalline material, the apparatus comprising:

- at least one left-handed circular and one right-handed circular polarizer,
- at least one image recording apparatus for recording one or several images of

the security element and determining respective intensity values,

- means for determining a differential image that subtracts the intensity values of corresponding partial areas of a left-handed and a right-handed circular image.

20. (Original) Apparatus according to claim 19, characterized in that means for an autonomous evaluation of the differential image are present.

21. (Previously presented) Apparatus according to claim 19, wherein said apparatus has means for storing the intensity values of the partial areas of one or several images.

22. (Previously presented) Apparatus according to claim 19, wherein said apparatus has an illumination apparatus.

23. (Original) Apparatus according to claim 22, characterized in that as an illumination apparatus a bundle of light guide fibres is provided.

24. (Previously presented) Apparatus according to claim 19, characterized in that between the security element and an image recording apparatus a circular polarizer is disposed.

25. (Previously presented) Apparatus according to claim 22, characterized in that between the illumination apparatus and the security element a circular polarizer is disposed.

26. (Previously presented) Apparatus according to claim 19, characterized in that means for an automatic change of a circular polarizer are present.

27. (Previously presented) Apparatus according to claim 19, wherein said apparatus has two image recording apparatuses.

28. (Original) Apparatus according to claim 27, characterized in that between the security element and the image recording apparatuses a beam splitter is disposed.

29. (Previously presented) Apparatus according to claim 19, characterized in that it has a display device for representing the differential image.

30. (Previously presented) Apparatus according to claim 19, characterized in that as image recording apparatus/es at least one digital or video camera is provided.

31. (Previously presented) Apparatus according to claim 19, characterized in that the left-handed circular and the right-handed circular polarizer are combined in one circular polarizer in such a way, that left-handed circular and right-handed circular areas alternate in a checkerboard fashion, and this combined circular polarizer is disposed directly in front of the image detector of an imaging apparatus.

32. (Previously presented) Apparatus according to claim 19, characterized in that in the beam path in front of at least one of the image recording apparatuses at least one colour filter is disposed.